



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,493	01/23/2004	Markus Tuomikoski	3501-1082	5414

466 7590 06/15/2006

YOUNG & THOMPSON
745 SOUTH 23RD STREET
2ND FLOOR
ARLINGTON, VA 22202

EXAMINER

LIN, JAMES

ART UNIT	PAPER NUMBER
----------	--------------

1762

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/762,493

Applicant(s)

TUOMIKOSKI ET AL.

Examiner

Jimmy Lin

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) 19 and 20 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-18 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/19/2005.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-18 in the reply filed on 04/21/2006 is acknowledged.

Claim Objections

2. Claim 12 is objected to because of the following informalities: The claim recites "rotation of the rotating rotating roll" in lines 9-10. The phrase should be changed to "rotation of the rotating roll". Appropriate correction is required.
3. Claim 14 is objected to because of the following informalities: The claim recites that components are formed having a size of "a droplet". The term "a droplet" does not clearly relate to the droplets defined in claim 13. A phrase such as "one of said droplets" better would link the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 2, 5, 7, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites "depositing other layers" in line 8. The claim does not recite in earlier lines that a layer has been deposited, so the term "other layers" is indefinite. For the purpose of this examination, "other layers" is inclusive of any one of the layers recited earlier in claim 2.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1762

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 6, 8-11, and 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sheats et al. (EP0986112).

Sheats discloses a method of fabricating an organic EL device, comprising:

an organic EL layer 22 between electrodes 14,24,26,28,30 (Fig. 1);

running a continuous web 41 through a roll-to-roll process using a rotating roll 44 [0025];

depositing an organic EL material onto the substrate [0010];

forming an organic EL layer in the roll-to-roll process by transferring a liquid-phase organic EL material onto the substrate from a rotating roll [0010].

Claim 3: The EL layer 82 is transferred onto anode 14 (Fig. 9).

Claims 6,8: All the layers of the EL device are deposited one after another, forming a multilayer component (abstract, [0036]).

Claim 9: The process can be repeated to deposit additional layers on the substrate [0010].

Claim 10: The EL coating is dried with a radiation of heat [0010].

Claim 11: A doctor blade is applied to the roller [0010].

Claims 13,14: The gravure coating technique is used to deposit interspersed arrays of discrete organic EL tiles [0011].

Claim 15: The gravure coating technique is used to deposit a uniform layer of EL material [0010].

Claims 16,17: The electrodes and EL layers are patterned [0020].

Art Unit: 1762

8. Claim 1, 3-4, 6, 8, 10-11, 13-14, and 16-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Sarnecki (2003/0089252).

Sarnecki discloses a method of producing an organic light emitting device, comprising:

an organic EL active layer 3,4,5 between two electrode layers 2,6 for electric coupling (Fig. 1A);

forming the organic EL active layer by transferring a liquid-phase organic EL active material onto the substrate from a rotating roll having direct contact with the surface of the layer moving along with the rotation of the rotating roll [0006],[0011].

Claim 3: The EL layers 3,4,5 are transferred onto anode 2 (Fig. 1A).

Claim 4: An operational layer 16 is transferred onto the substrate between a pair of electrodes (Fig. 1D).

Claims 6,8: All the layers of the EL device are deposited one after another, forming a multilayer component [0006],[0012].

Claim 10: The EL layer is dried with a radiation of heat [0022].

Claim 11: A doctor blade is applied to the roller [0006].

Claims 13,14: The EL material is transferred to the substrate in the form of dots via a gravure roll [0009].

Claims 16,17: The electrodes and EL layers are patterned (Figs. 1A-2A).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1762

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheats et al. (EP0986112) as applied to claim 2 above.

Sheats teaches a method of fabricating an EL device in a roll-to-roll process as discussed above, but does not teach that an array of components is formed on the substrate or the cutting of the continuous substrate. However, the continuous web used in the process of Sheats would not be the final product. The continuous web would be too large to have practical use as an EL device. One skilled in the art would obviously cut the web into a predetermined size. In addition, Sheats intends to use a continuous web so that the benefits of web processing may be used. One of the benefits of web is the ability to manufacture multiple products onto a single substrate, thereby increasing the efficiency and throughput. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to cut the array/matrix of components on the continuous web. One would have been motivated to do so in order to cut the web into a useable and practical size.

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sheats et al. (EP0986112) as applied to claim 1 above, and further in view of Calendine et al. (2004/0265487).

Sheats teaches the deposition of EL materials with a gravure roller and forming a uniform coating onto the substrate [0028], but does not explicitly teach that the EL material is spread onto a first rotating roll, transferring the EL material from the first roll to a second rotating roll, and depositing the EL material onto the substrate from the second rotating roll. However, Calendine teaches a method of applying a seamless coating of a surface-modifying material to a product roller 12

Art Unit: 1762

by transfer from a gravure roller 18 [0006] (Fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have applied the EL material from the gravure roll of Sheats onto product roller. One would have been motivated to do so in order to form a seamless coating on the product roller, thereby forming a uniform EL layer onto the substrate as desired by Sheats.

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sheats et al. (EP0986112) as applied to claim 1 above, and further in view of Lindmayer (4,748,375).

Sheats is discussed above, but does not explicitly teach encapsulating the EL device. However, Lindmayer teaches an EL device, wherein an encapsulating layer is applied to prevent moisture from entering the structure. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to encapsulate the EL device of Sheats. One would have been motivated to do so in order to keep moisture out and prevent the deterioration of the EL device.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Iwasaki (5,266,144) and Nishiguchi (2004/0202778) teach gravure coating methods.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Thursday 8 - 5:30 and Friday 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1762

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

06/06/2006



TIMOTHY MEEKS
SENIOR PATENT EXAMINER